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Nieco o gruczołach znajdujących się
w przedtułowiu korników (*Scolytidae*) i wyrzynników
(*Platypodidae*) (*Coleoptera*).

Contribution to the knowledge of prothoracic glands
of *Scolytidae* and *Platypodidae* (*Coleoptera*).

[Pl. XXXVI].

Since about 40 years certain holes in the chitinous case of the prothorax of beetles discussed here began to call attention of entomologists dealing with the aforementioned families. In *Platypodidae* those openings had been perceived much earlier, their significance, however, was not taken into consideration; they were recognized merely as specific features. There was no reference whatever to their existence in primary descriptions of genera provided with such holes. They have been noticed only when compared with various species, a long time after. Thus far 5 genera have been distinguished for this interesting feature:

a) the family *Scolytidae* the genera *Dactylipalpus* CHAP., *Phloeoborus* ER. and *Scolytoplatypus* SCHAUF.,

b) the family *Platypodidae* — the genera *Platypus* HRBST. and *Diapus* CHAP..

The holes bear the most primitive outlook in *Platypus* HRBST. as well as in certain species of the genus *Diapus* CHAP. (both genera appearing mostly in the tropics); situated at both sides of the furrow running along the pronotum, those openings are ordinarily

even and characteristic for females only (*Platypus*); the verges of the holes, slightly elevated, are often darkened. It is easily perceived that they go far into the pronotum. Heretofore it has not been stated with what they are connected inside. In some species of the genus *Diapus* CHAP. — for example in *Diapus furtivus* SAMPS (India) — the number of the holes is much larger in the male — 11 on each side of the furrow, while in the female there are 3—5; the posterior verge of the opening is provided with a protruding bristle that reaches the anterior edge thereof. The first more definite view on the role of those holes has been expressed by BEESON (1) (I am quoting it after W. J. CHAMBERLIN (3)). In his opinion small globules of fat substance are supposed to be present in the openings, to which cling the spores of the fungus grown by the beetle; the spores germinate and, after the gallery is established, they fall off and grow on its walls. However, nothing has been reported by BEESON with regard to the source of the fat. It is presumed that some gland secreting it must be connected with the openings. In another species of the same genus, in *Diapus pusillimus* CHAP. (Indo-Australian species) there has been recorded by SAMPSON that at the posterior margin of the pronotum [Fig. 1], both in males and females, two deep furrows with tiny holes inside run more or less parallelly to that margin; at the beginning of the furrow of the pronotum they become nearly contiguous. That much as regards their outlook; but there is no reference to their function.

The openings in the pronotum, similar to those of the genus *Platypus* HRBST. but singular in number, are to be found in nearly all females of the genus *Scolytoplatypus* SCHAUFL. (Africa, South and East Asia). The opening is oval or round and usually situated rather close to the anterior margin. Out of those holes ends of bristles are protruding; the very verge of the opening is also surrounded with bristles, probably with a view to protect the inside from filth. BERGER and CHOLODKOVSKIJ (2) not only give a precise description of the hole itself, but assert moreover, that it constitutes the mouth of a multicellular and complicated gland concealed under the chitinous case of the pronotum; they also presume that this gland plays some unknown part during the sexual act („The function of this gland is unknown, but it stands probably in connection with the sexual act“).

In the genus *Dactylipalpus* CHAP. (Africa, Indo-Malaya (5)) the females of certain species are provided, beyond the anterior border

of the pronotum [Fig. 2], with a slot; whether any other gland corresponds to it inside the pronotum has not been stated so far. Likewise, on female propleurae of certain species of the genus *Phloeoborus* ER. (America (5)) there is just beyond the border of the prothorax a circular hollow with openings [Fig. 3] at its bottom, through which filters a thick liquid coagulating in contact with air; the hollow is covered with scarce bristles growing on the posterior and lateral verges of the concavity. As yet it has not been set down what sort of liquid it is, what the gland secreting it looks like and what this apparatus is meant for.

In 1927, when working at some preparations for a comment on mouth parts of bark beetles, I noticed in *Xyloterus lineatus* OL. inside the prothorax, one large gland situated at each side of it close to the coxae, and reminding of a curved tube. Having paid no further attention to my observation, it is only now that I have perceived that those glands were present only in females; it proved true for all Polish species (*Xyl. domesticus* L., *signatus* F. and *lineatus* OL.) as well as for female specimens of North American *Xyloterus bivittatus* PROV. (being at present identified with the species *Xyl. lineatus* OL.)

The slot-like opening leading to the gland is situated rather in the lower posterior part of the pleurae of the prothorax, at a small distance from the coxae concavities [Fig. 4]. The slot is covered with bristles growing on one side only. The anterior end of it reaches in *Xyl. lineatus* OL. the margin of the hemi-spheric concavity in the pleurae. In the other two species the borders of this concavities are less regular, the very hollow being somewhat shallower. The gland which begins behind the opening is in shape of a tube running at the posterior border of the prothorax, in a contrary direction to the coxae concavities [Fig. 5 and 6]; at a certain point it turns back. Both in *Xyl. domesticus* L. and in *Xyl. signatus* F. [Fig. 5] the gland terminates at the angle which is formed by the posterior wall of the coxae sinuation and the posterior border of the prothorax; in *Xyl. ineatus* OL. [Fig. 6] the very tip of the gland is once more tucked underneath.

I have no definite view on the function of the gland discussed here; biological observations seem indispensable for that purpose, which requires moreover an exact knowledge of the structure and the secretion of the gland; such a study should be based on fresh material, while at my disposal I had only a dried one. The gland

might probably serve for storage of the spores of fungus grown in the gallery. It is remarkable that those glands and holes should have been noticed in some genera of *Scolytidae* and *Platypodidae* feeding on fungus grown in the gallery (*Scolytoplatypus* SCHAUF., *Xyloterus* EICHH., *Platypus* HRBST. and *Diapus* CHAP.); observations are lacking as to whether *Dactylipalpus* CHAP. and *Phloeoborus* ER. are likewise feeding on fungus. I presume that in *Scolytoplatypus* as well such gland stands in no connection with the sexual act (2), and that this is rather a structure that partakes in an unknown way in spreading out of the eventual breeding of the fungus. It might seem strange that no similar anatomic particular has been stated in *Xyleborus* ER. reckoning 1000 species approximately, in spite of the fact that all of them are feeding without exception on the fungus grown in the gallery.

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EXPLANATION OF PLATE XXXVI.

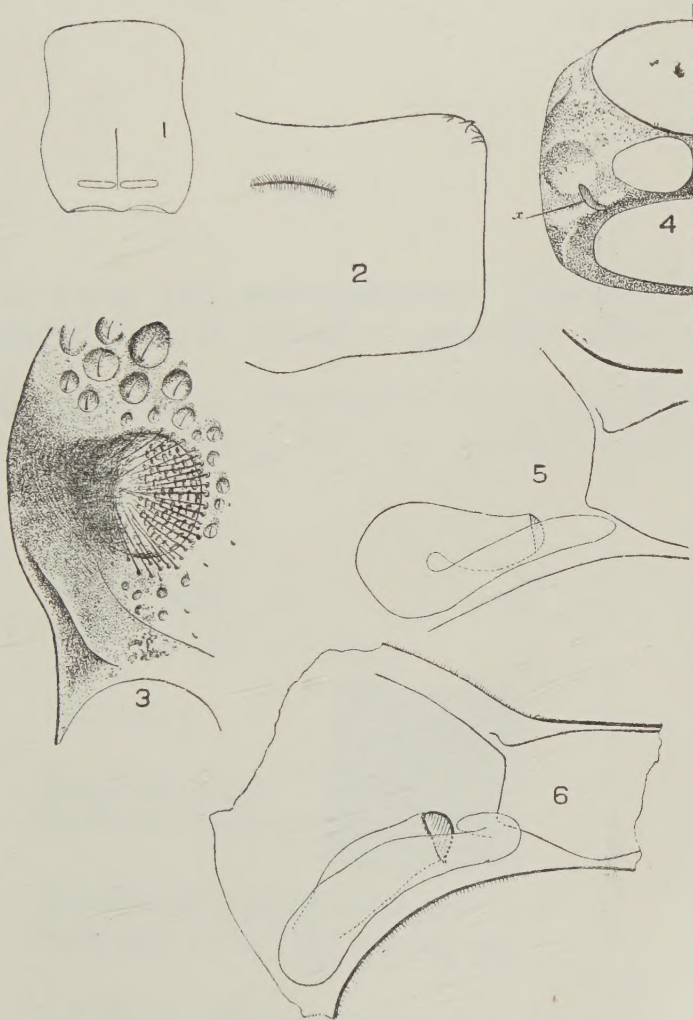
- Fig. 1. *Diapus pusillimus* CHAP. — Outline of the oblong furrows at the posterior margin of the pronotum, x 38.
- Fig. 2. *Dactylipalpus transversus* CHAP. — Slot in the anterior margin of pronotum, x 10.
- Fig. 3. *Phloeoborus rudis* ER. — Circular hollow in the prothoracic pleura with gland mouths apparent in the bottom, x 38.
- Fig. 4. *Xyloterus lineatus* OL. — Prothorax viewed from underneath: „x“ — gland mouth, x 38.
- Fig. 5. *Xyloterus domesticus* L. — Outline and situation of the gland in the prothorax, x 100.
- Fig. 6. *Xyloterus lineatus* OL. — Outline and situation of the gland in the prothorax, x 100.
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STRESZCZENIE

Autor daje krótki przegląd literatury dotyczącej gruczołów tułowiowych chrząszczy rodzajów *Dactylipalpus* CHAP., *Phloeoborus* ER., *Scolytoplatypus* SCHAUF., *Platypus* HRBST. i *Diapus* CHAP. Podkreśla, że funkcja tych gruczołów nie jest znana i przypuszcza, że stoją one w związku z hodowlą grzyba, którym żywią się larwy wymienionych chrząszczy. Podaje opis gruczołu stwierdzonego przez siebie w przedpleczu samic krajowych gatunków drwalników (*Xyloterus lineatus* OL., *X. domesticus* L. i *X. signatus* F.), oraz u półn.-amerykańskiego *X. bivittatus* PROV. (obecnie uważanego za gatunek identyczny z naszym *X. lineatus* OL.). Dziwnym wydaje się brak podobnych gruczołów w licznym rodzaju rozwiertka (*Xyleborus* ER.), którego wszystkie gatunki żywią się w stadium larwy grzybem przez siebie hodowanym.



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